IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:
Christopher B. Weare

Confirmation No.: 7351

Application No.: 09/934,071

Group Art Unit: 2177

Filing Date: August 20, 2001

Examiner: Debbie M. Le

For: SYSTEM AND METHOD FOR PROVIDING ADAPTIVE MEDIA PROPERTY CLASSIFICATION

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

DECLARATION PURSUANT TO 37 C.F.R. 1.131

I, Christopher B. Weare, declare and say that:

1.   I am the sole inventor of the invention described and claimed in U.S Patent Application No. 09/934,071 (the above-identified application, hereinafter "the '071 application"), which was filed with the United States Patent and Trademark Office on August 20, 2001.

2.   I understand that U.S. Provisional Application No. 60/216,423, filed on July 6, 2000, is the priority application to which the '071 application claims priority.

3.   As sole inventor, I am familiar with the '071 application and the associated rejections alleged in the outstanding Official Action, dated June 15, 2004. I am also familiar with the references cited by the United States Patent and Trademark Office in connection with the outstanding Official Action, including U.S. Patent Application Publication No. US 2003/0014407 A1 (hereinafter "Blatter") and U.S. Patent No. 5,918,223 (hereinafter "Blum").

4. In particular, I understand that claims 1-15, 18-35 and 38-40 of the above-identified patent application were rejected under 35 U.S.C § 103(a) over Blatter and Blum.

5. I understand that Blatter was filed on April 11, 2002 and, as far as I am aware, is still pending before the U.S. Patent & Trademark Office.

6. I understand that Blatter claims priority to U.S. Provisional Application No. 60/282,885, filed on April 11, 2001, and while I have not examined the content of U.S. Provisional Application No. 60/282,885, I understand that April 11, 2001 is thus the earliest possible effective date to which the Blatter reference may be entitled.

7. In accordance with 37 CFR § 1.131, as inventor of the subject matter of the rejected claims, and without conceding the propriety of the outstanding rejections, I hereby declare that I invented the subject matter of the rejected claims prior to April 11, 2001, the earliest possible effective date of the Blatter reference, and thus I am the prior inventor as referred to in that Section.

8. In particular, I am the prior inventor because I conceived of the invention represented by the rejected claims prior to April 11, 2001. Soon after my conception, with due diligence, on July 6, 2000, I constructively reduced the invention to practice by timely filing a provisional application with the United States Patent & Trademark Office to secure my patent rights.

9. As evidence of my prior conception, I made mention of the invention of the '071 application in a notebook (copies of the relevant notebook pages attached hereto) on May 25, 2000. The notebook pages were then signed and witnessed by a third party, Michael J. Carreno, currently a Microsoft employee.

10. Accordingly, it is my belief that the copies of the relevant pages from my notebook attached hereto evidence my possession of the invention described in the '071 application prior to April 11, 2001, thereby removing Blatter as an applicable reference.

11. I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information or belief are believed to be true; and further that these statements were made with the knowledge that willful false

statements and the like so made are punishable by fine or by imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful statements may jeopardize the validity of the application, any patent issuing there upon, or any patent to which this verified statement is directed.

Date: 8/10/2004

Christopher B. Weare

./drive10sp <oddjobs> <entropyClip> <hum>

5/11/00   RE: mp3 Conference Call
          Why two months?
              QA with the dB
          areas to cover
          1. mp3.com so big

          2. no humans! want turnkey

A human → update of a cd   05-12-00

5/15/00

                Three components of the auto-analysis
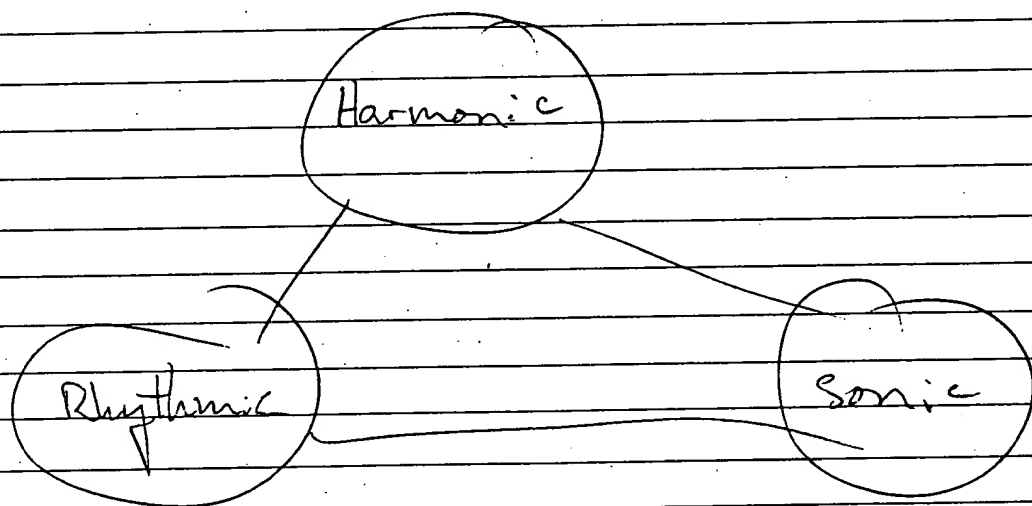
harmonic is the partial description. Partials are e
from the signal via SFFT. **the** the partial amplitudes e
altered vis à vis fletcher-munson curves as well as
they are then assigned to notes.
                    component
Rhythmic ~~Information~~ contains tempo and note ons

Sonic contains the critical band energy on a fra
frame basis

Calculating the harmonic Components

Flowchart:

- Read frame
- SFFt
- Calc Peak Positions
- Take top N Peaks
- Calc masked Peaks
- ~~Calc for the ~~ (crossed out)
- Tag Significant Partials
- Calc frame tuning
- bin Partials to 88 note scale
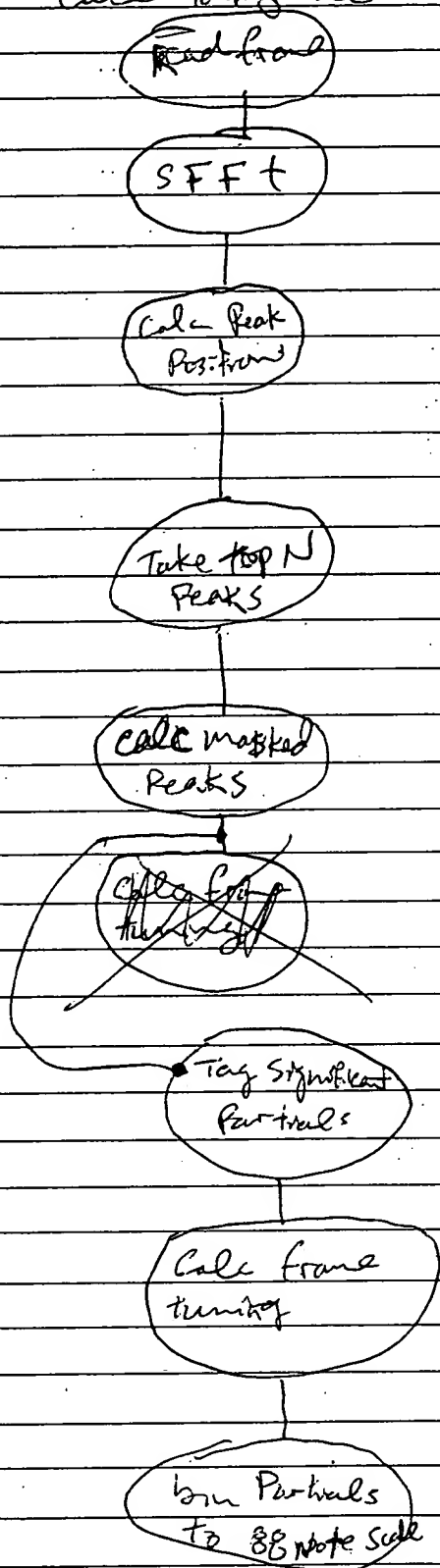
Calculating the sonic components

```
    ( read frame of Data )
            |
          ( FFT )
            |
    ( ~~distribute~~ each bin )
    ( Calc Energy in bin )
            |
      ( Calc frame )
      ( Entropy )
            |
      ( Calc frame )
      ( Energy )
```
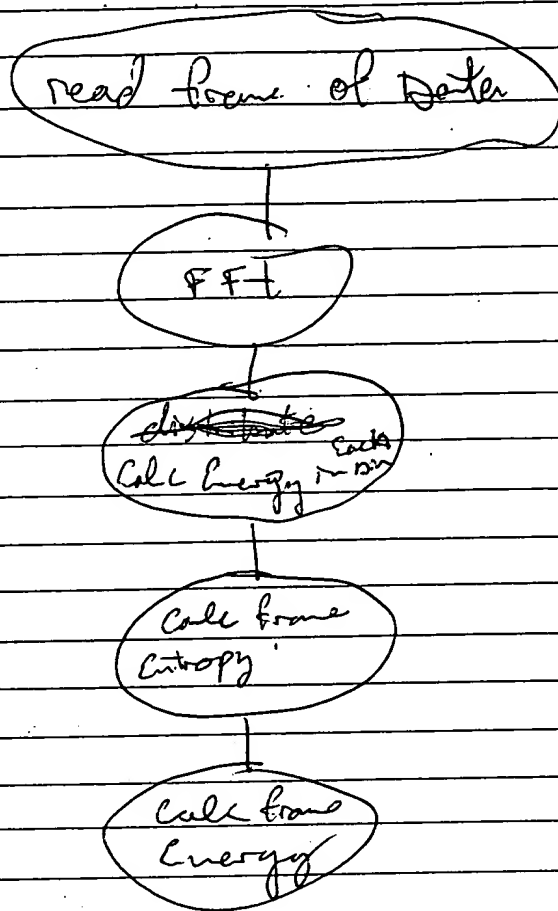
5/16/00

use neural networks to map parameters to
gromed parameters

using newff with 30 hidden layers and 1
output layer we get an st.dev for W of 11860
for 4760 elements. learnbr suggest 48 parameters
run again with 50 parameters R = 0.67
for Density we get a 10.4 std with the above
topology. R = 0.593 it seems we need more
10's & 0's. network is biased towards ~ 50~60

5/17/00   Train network on weight + Density of first
600 alt-Rock songs. R = 0.74 for data
run 601 ~ 701 thru net yielding an R of
0.946! this shows Excellent generalization

Train network for Heavy metal
for 30 epocs we get R = .714 for ~~Density~~ weight
and R = 0.342 for Density

R = 0.633 for weight.

Train network with 100 Hidden nodes:
R = 0.804 for weight
R = 0.693 for Density
Check generalization!
R = 0.833 for weight
R = 0.438 for Density
Poor Generalization.

add too many Neurons and the shit gets poor

Train one NN on all songs wit
as an input to the net.

R = 0.647 for Density ⎫
                        ⎬ 10 training Epoc
R = 0.217 for weight   ⎭

eD std = 9.8333
eW std = 11.1602

5/18/00

Create new data set with:

1	2	3	4	8	6
Genre ID	G Density	Gweight	CDensity	Density Std	Cweight	Cwei
1-22	10-100	10-100	1.4-5.3	0.057-11.03	0.58-93.3	.53

608

after 20 training Epochs R = .582 for Density
Std = 11.58
after 40 training Epochs R = .614 for Densit
Std = 11.22
generalization of net:
R = 0.501 for Density
Std = 10.1 → Successful Generalization
continue training

after 60 Epochs we get R = .623   800 4
11.12 std
Generalization:
Std. = 10.07   R = .504

...ion Network for HipHop/Rap after 20 Epochs:
$R = 0.589$ for Density
$R = 0.633$ for weight.

...an network with 100 Hidden nodes:
  $R = 0.804$ for weight
  $R = 0.693$ for Density
    Check generalization:
  $R = 0.333$ for weight
  $R = 0.438$ for Density
      Poor Generalization.

    add too many neurons and the shit gets poopy!

        Train one NN on all songs with genre number
as an input to the net.

  $R = 0.647$ for Density   ⎫
                              ⎬ 10 training Epochs
  $R = 0.217$ for weight   ⎭

    e_D std $= 9.8333$
    e_w std $= 11.1602$

8/00
      Create new data set with:

1	2	3	4	5	6	7	8	9	10
enre ID	G Density	G weight	C Density	Density Std	C weight	C weight std	En	Cn std	Temp
-22	10-100	10-100	1.4-5.3	0.057-11.03	0.58-83.3	0.53-917			
						0.53-0.93			
						0.56-0.94	1.31-2.5		

...fter 20 training Epochs $R = .582$ for Density
Std $= 11.58$
...fter 40 training Epochs $R = .614$ for Density
...td $= 11.22$
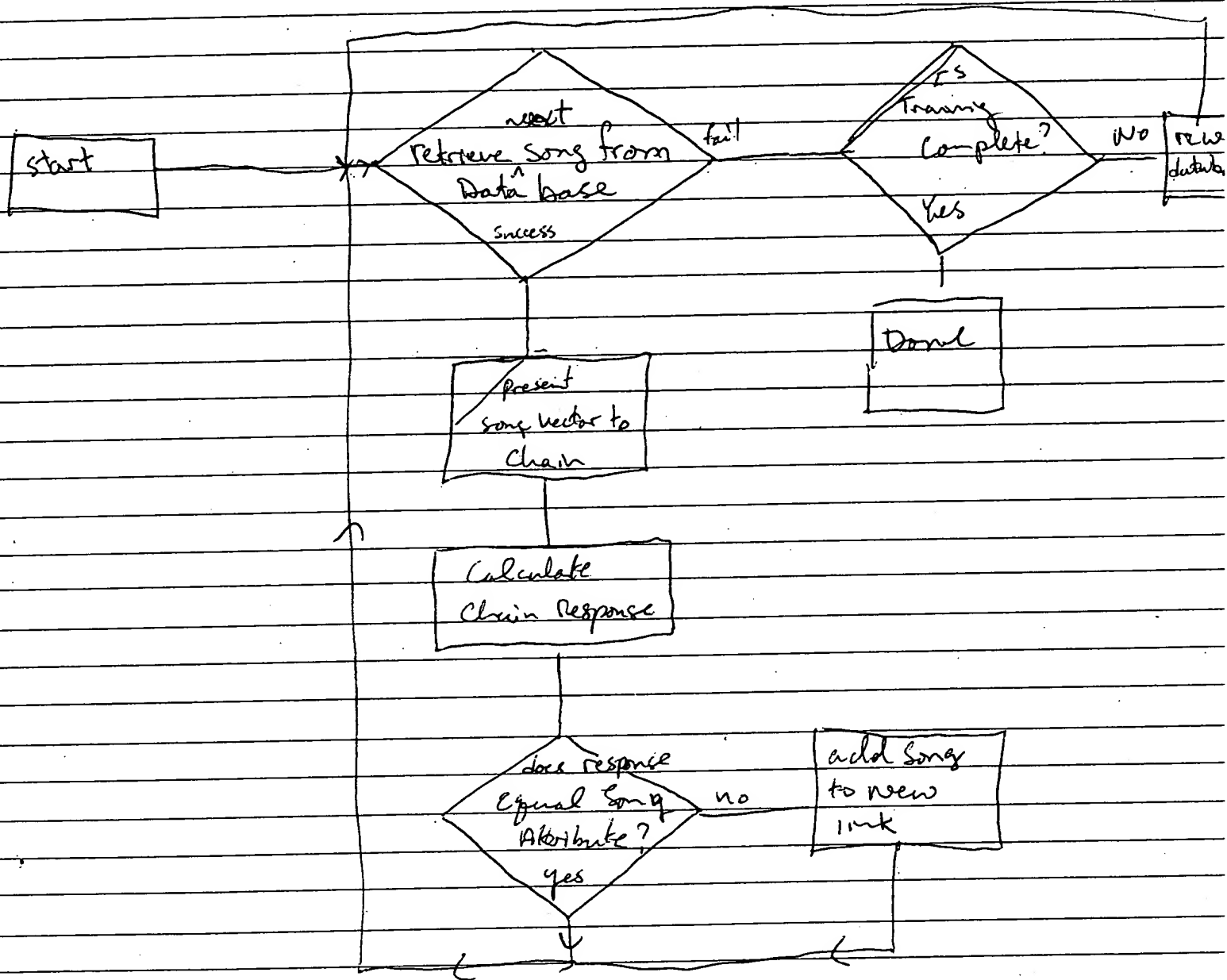   generalization of net:
            $R = 0.501$ for Density
...td $= 10.1$ → Successful Generalization
          continue training

                                              Dawn

Classification Chain Algorithm

5/26/00

start → Retrieve song from Data base

next

fail

success

Present song vector to Chain

Calculate Chain Response

does response equal song Attribute?
yes
no

add song to new link

Is Training Complete?
Yes
No → new database

Done

mike Weiss @ 877-737-5669 6198

194 - 10
203 - 80
357   80-30
689   70-10

4:00 Patent meeting

5/31/00

run classification chain on 400 inputs with ave class over 3 nearest neighbors

correct: 165 (47.41%) ⟩ 89.08%
off by 1: 145 (41.67%)
off by 2: 32 (9.20%)
off by 3: 5 (1.44%)
off by 4: 1 (0.29%)
tagged for QA 52 (13%)

run classification on 400 inputs with 2K cells ave class over 5 nearest neighbors

correct 171 (47.24%) ⟩ 91.16%
off by 1 159 (43.92%)
off by 2 27 (7.46%)
off by 3 4 (1.10%)
off by 5 1 (0.28%)
tagged for QA 38 (9.5%)

Change 3rd Error from 15 to 14

Correct 167 (47.31%) ⟩ 91.5%
off by 1 156 (44.19%)
off by 2 26 (7.37%) ⟩ 8.5%
off by 3 4 (1.13%)
Tagged for QA 47 (11.75%)

run classification chain on 400 inputs with 2k cells
ave class over 3 nearest neighbors

   correct: 165 (47.41%) > 99.08%
   off by 1: 145 (41.67%)
   off by 2: 32 (9.20%)
   off by 3: 5 (1.44%)
   off by 4: 1 (0.29%)
   tagged for QA 52 (13%)

run classification on 400 inputs with 2k cells
ave class over 5 nearest neighbors

   correct 171 (47.24%) > 91.16%
   off by 1 159 (43.92%)
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   off by 5 1 (0.28%)
   tagged for QA 38 (9.5%)

   Change 3rd Error from 15 to 14

   Correct 167 (47.31%) > 91.5%
   off by 1 156 (44.19%)
   off by 2 26 (7.37%) > 8.5%
   off by 3 4 (1.13%)
   Tagged for QA 47 (11.75%)

6/2/00   Human aided Pitch Classification

- Play Song to Groover
- Groover finds Hook
- Groover Hums Hook
- Pitch Class of Hook is extracted via DSt
- information is Encoded ~~the~~ in midi forma

                              Michael J Carrena
                              Michael Carrena

6/5/00   1   2   3   9   4   5   6   9
            Key, Genre ID, Region; GD, GW, COn, CO2n, EBI -,

    → dynamic Time Warping

    integration of Processed data into produ

              1   ~~load training data~~
                  load decision tree
                  load data to be processe
                  Process data
                  write data to disk

                  sv_key, Density, we

2/00   Human aided Pitch Classification

- Play Song to Groover
- Groover finds Hook
- Groover Hums Hook
- Pitch Class of Hook is extracted Via DSP
- information is Encoded ~~the~~ in midi format

                                    Michael J Carreno   6/2/2000
                                    Michael J Carreno

5/00   1   2   3   9   4   5   6   8   30   34   54
            Key, Genre ID, Region; GD, GW, CDn, CDDn, EB1 - EB24, EBS1-EBS24

    →   dynamic Time Warping

        integration of Processed data into production

                    1   load ~~training data~~
                         load decision tree
                         load data to be processed
                         Process data
                         write data to disk

                         sv_key , Density, weight